

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
11 April 2002 (11.04.2002)

PCT

(10) International Publication Number  
**WO 02/029930 A3**

(51) International Patent Classification<sup>7</sup>: **H01R 4/68,**  
**H01B 12/16**

Poppel Allé 11, st.tv., DK-4000 Roskilde (DK). RAS-  
MUSSEN, Carsten [DK/DK]; Irmingsgade 15, st.tv.,  
DK-2100 København Ø (DK).

(21) International Application Number: **PCT/DK01/00639**

(22) International Filing Date: **2 October 2001 (02.10.2001)**

(74) Agent: **NIELSEN, Hans, Jorgen, Vind; NKT Research &  
Innovation A/S, Group IP, Danmarks Tekniske Universitet,  
Diplomvej, Bldg 373, DK-2800 Lyngby (DK).**

(25) Filing Language: **Danish**

(26) Publication Language: **English**

(30) Priority Data:  
**PA 2000 01454 2 October 2000 (02.10.2000) DK**

(81) Designated States (*national*): AE, AG, AL, AM, AT, AT  
(utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA,  
CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE  
(utility model), DK, DK (utility model), DM, DZ, EC, EE,  
EE (utility model), ES, FI, FI (utility model), GB, GD, GE,  
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,  
MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG,  
SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA,  
UG, US, UZ, VN, YU, ZA, ZW.

(71) Applicant (*for all designated States except US*): **NKT  
RESEARCH & INNOVATION A/S [DK/DK]; Group  
IP, Danmarks Tekniske Universitet, Diplomvej, Bldg 373,  
DK-2800 Lyngby (DK).**

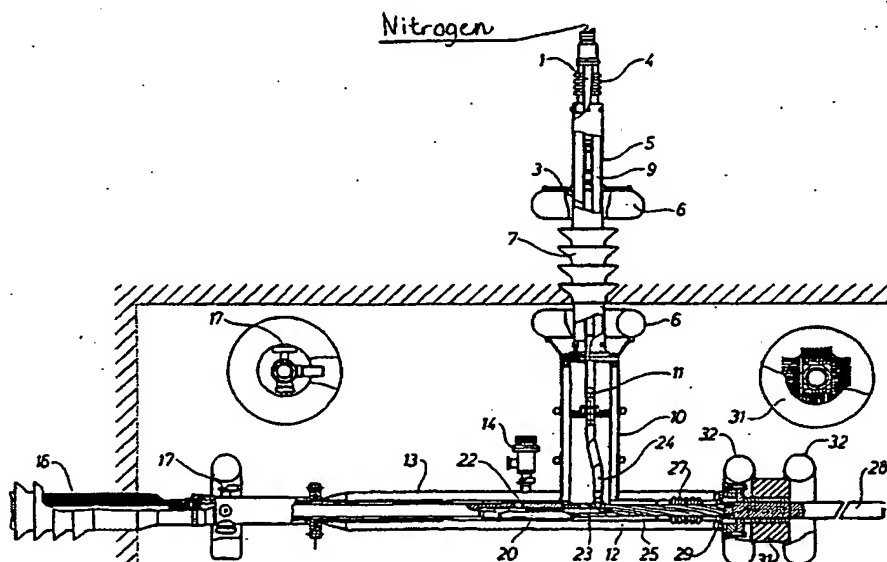
(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **RASMUSSEN,  
Claus, Nygaard [DK/DK]; Knivholtvej 16, 1. tv.,  
DK-2720 Vanløse (DK). HANSEN, Finn [DK/DK];**

(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian  
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European  
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,  
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,

[Continued on next page]

(54) Title: **A TERMINAL CONNECTION FOR A SUPERCONDUCTIVE CABLE**



(57) Abstract: A terminal connection of a superconductive cable comprising a thermally insulating high-voltage cable through whose interior liquid nitrogen flows. The superconductive cable comprises a plurality of superconductive tapes which are in connection with a copper block (20), which is likewise cooled by means of the liquid nitrogen, and is in connection via flexible electrical conductors (25) with a top bolt (28) which may be connected to electrical equipment at room temperature. Via a T member, the liquid nitrogen is in connection with a cooling machine which is electrically insulated from the remaining part of the terminal connection.

WO 02/029930 A3



CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,  
TG).

(88) Date of publication of the international search report:  
18 July 2002

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 01/00639

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H01R 4/68, H01B 12/16

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H01R, H01B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6049036 A (PIERO METRA), 11 April 2000 (11.04.00), see whole document	1-13
A	US 5319154 A (JEAN-CLAUDE KERMARREC), 7 June 1994 (07.06.94), see whole document	1-13
A	US 3959576 A (PETER PENCZYNSKI ET AL), 25 May 1976 (25.05.76), see whole document	1-13
A	US 3902000 A (ERIC B. FORSYTH ET AL), 26 August 1975 (26.08.75), see whole document	1-13

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

- \* Special categories of cited documents
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

25 March 2002

15.04.02

Name and mailing address of the ISA/  
Name and mailing address of the International Searching Authority  
European Patent Office P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk  
Tel: (+31-70) 340-2040, Tx 31 651 epo nl,  
Fax: (+31-70) 340-3018

Authorized officer

Stig Edhborg/MN  
Telephone No.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 01/00639

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Patent Abstracts of Japan, Vol 2000, No 2, 29 February 2000 (29.02.00), abstract of JP 11-329526 A (SUMITOMO HEAVY IND LTD), 30 November 1999 (30.11.99), see abstract  --	1-13
A	Patent Abstracts of Japan, Vol 1999, No 1, 29 January 1999 (29.01.99), abstract of JP <del>10-283854-A</del> (FUJIKURA LTD), 23 October 1998 (23.10.98), see abstract  -- -----	1-13

(Continuation of second sheet) (July 1998)

SA 72303

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

28/01/02

International application No.  
PCT/DK 01/00639

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
US	6049036	A	11/04/00	AU	707596 B	15/07/99
				AU	7427196 A	26/06/97
				BR	9604741 A	23/06/98
				CA	2192533 A	22/06/97
				EP	0780926 A	25/06/97
				IT	1281651 B	20/02/98
				IT	MI952723 A	23/06/97
				JP	9190847 A	22/07/97
				NZ	299899 A	25/03/98
US	5319154	A	07/06/94	CA	2055809 A	21/05/92
				DE	69104462 D,T	09/02/95
				EP	0487043 A,B	27/05/92
				FR	2669470 A,B	22/05/92
				JP	3100083 B	16/10/00
				JP	5030632 A	05/02/93
US	3959576	A	25/05/76	AT	339979 B	25/11/77
				AT	958374 A	15/03/77
				CA	1030622 A	02/05/78
				CH	594999 A	31/01/78
				DE	2409868 A,B	11/09/75
				FR	2262855 A,B	26/09/75
				GB	1499434 A	01/02/78
				IT	1033299 B	10/07/79
				JP	50121792 A	23/09/75
US	3902000	A	26/08/75	NONE		